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ABSTRACT

The original objective of the nursery school was that acting in cooperation with the home, it should develop children motorically, intellectually, emotionally, and socially. A comparison of objectives with effects reveals many to be non-existent. A 1966 study of nursery school effects on child development revealed the following breakdown: (1) favorable effects in the areas of general knowledge, vocabulary, capacity for linguistic expression and ability to manage certain daily routines without assistance, and (2) absence of results with respect to motorical, social, and emotional adjustment, marks scored in the test of readiness for school attendance, performance in reading, writing, and arithmetic during the first three years' attendance at school. The project reported on in this paper concerns the use of new techniques of learning in nursery school methodology. The fields of social training, training in communications, and training in comprehension were the fields tested. The program is currently being implemented with the aid of control group procedures. All of the children are tested at the beginning and end of the school year with the following instruments: readiness for school attendance; sound analysis test, vocabulary test, attitude test, general knowledge test , and observations of standardized play situations. The methods used in the experimental groups are validated with the assistance of observations in accordance with a variant of Flanders. Appendices 1, 2, and 3 contain the various project aims; Appendices 4 through 7 contain instructions for teachers. (CK)

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newsletter **SCHOOL RESEARCH**

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May 1971

Current Project 1971:8

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Project Title: Nursery School Project

Carried out at: The Institute of Educational Psychology, Gothenburg School of Education

Scientific leader: Professor Karl-Gustaf Stukát

Project leader: Karl-Axel Sverud, Fil.mag.

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Background:

In the official objective set up for the nursery school (SOU 1951:15) it is stated that the nursery school acting in cooperation with the home should develop children motorically, intellectually, emotionally and socially. A comparison of the vague and general objective with the actual effects resulting from attendance at nursery school shows that the latter are inconsiderable or contradictory and sometimes non-existent (Sjölund 1969). In the course of an investigation on the influence of the nursery school on the development of children Stukát (1966) noted favourable effects of preschool care in certain respects. Among other aspects observed were the ability to manage certain daily routines without assistance, general knowledge, vocabulary and the capacity for linguistic expression. At the same time the absence of results expected in other spheres was noted. Thus there were no differences compared with children who remained at home in respect of motorical, social and emotional adjustment, marks scored in the test of readiness for school attendance or performance in reading, writing and arithmetic during the first three years' attendance at school.

A comparison between the aims set up and the aims attained against the background of recent child psychological research indicating the importance of early environment for the subsequent development of the personality would suggest that there is reason to try out new techniques of learning in nursery school methodology as a complement to the free, unsystematic and spontaneous activities that have hitherto played a predominant part.

It should be emphasized that these new features are not intended to replace earlier activities but should be regarded as complementary to the often indirect and sometimes unconscious pedagogical methods based on the nursery school teacher's way of being in the group.

For further information on the background see School Research Newsletter 1969:3.

Working Plan

On the basis of the official objective and with the intention of processing elements which have to some extent been inadequately treated, those responsible for this project have chosen to deal with the fields of social training, training in communications and training in comprehension.

1 Within each of these fields a hierarchical breaking down of the various aims into gradually more and more precise terms has been carried out to the point where the aim is described as the behaviour the child is expected to master after a certain period of training (Appendices 1, 2 and 3).

2 The forms of terminal behaviour defined in the analyses of the aims have provided the basis for working out methodmaterial descriptions subsequently linked together so as to constitute a systematic educational programme. The programme is presented in the form of instructions for teachers in the fields concerned (Appendices 4, 5 and 6) as well as integrated instructions covering the various subjects (Appendix 7).

3 The programme is being tested during the present school year with the aid of control experiment group procedures. About 500 children use the experimental programme and the same number attend nursery school without following the programme. All the children are tested with the following instruments at the beginning and end of the school year:

Test of readiness for school attendance (Malmqvist)
Sound analysis test (Malmqvist)
Vocabulary test (newly constructed)
Attitude test (newly constructed)
General Knowledge test (newly constructed)
Observations of standardized play situations

During the course of the experiment the children's attitude to the nursery school, the experimental material and to school are measured.

The attitudes of the experimental teachers to the programme are also measured.

The methods used in the experimental groups are validated with the assistance of observations in accordance with a variant of Flanders.

4 Possible long-term effects of the experimental programme will be investigated when the children are admitted to the 1st Form in the Spring Term of 1972. Reporting will be carried out by means of a verbal description supplemented by the instructions to teachers that have been worked out and the prototype material produced. The methods will be illustrated with the aid of a film made in the course of the experiment.

Report	+	Methodical programme	+	Prototypes	+	Film

It is expected that the experience gained from this project together with the results of another coordinated project can form a basis for making recommendations for a more systematic syllabus containing suggestions for suitable material and adequate methods for working

with six year olds. The Nursery School Commission of 1968 has been privately informed about the progress of the experiment.

To the extent the field investigation indicates positive results, it is planned to introduce the methods used into nursery school teacher training within the framework of the DPA Project now in progress at the institute.

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Appendix 1

SOCIAL TRAINING
Desirable attitudes and ideals as well as good habits, skills and patterns of behaviour.

- Respect and understand THE WORTH OF THE INDIVIDUAL — I
  - 1
  - 2
- Respect and understand MATERIAL VALUES — II
  - 1
  - 2
  - 3
- Respect and understand RULES AND STANDARDS FOR HUMAN COEXISTENCE — III
  - 1
  - 2
  - 3
- Respect and understand EMOTIONAL REACTIONS — IV
  - 1
  - 2
  - 3

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I Respect and understand THE WORTH OF THE INDIVIDUAL

1 Understand OWN WORTH
Able to describe oneself
Understanding of own pace (things one deals with quickly/slowly).
Able to give example of things one can manage/cannot manage.
(Realistic picture of own capacity.)
Give examples of things one likes to do.
Give examples of occasions when one has meant something to the group (parents, friends and others).
Draw a realistic self-portrait in the form of a sociogram.

2 Understand THE WORTH OF OTHERS
Give examples of situations when someone has meant something to (helped/cheered up) me or the group.
Give examples of things which some school friend does particularly well.
Motivate choice of friends
Give examples of situations when it is good to have grown-ups around.
Give examples of games played together with a handicapped person.
Give examples of similarities/dissimilarities between various nationalities ("normal"/handicapped).

II Respect and understand MATERIAL VALUES

1 Able to take care of OWN BELONGINGS
Motivate why own belongings should be cared for.
Give examples of how one takes care of own belongings.
Give examples of the consequences of not looking after own belongings.

2 Able to look after OTHERS' BELONGINGS
Motivate why the belongings of others should be cared for.
Give examples of how one cares for the belongings of others.
Suggest what attitude one should adopt towards belongings which seem to be ownerless.

III Can look after COMMON BELONGINGS - THE ENVIRONMENT

Motivate why common belongings (the environment) should be cared for.

Give examples of how common belongings (the environment) should be cared for (e.g. the nursery school's).

Give examples of the consequences of not caring for the environment.

III Respect and understand RULES AND STANDARDS FOR HUMAN COEXISTENCE

1 Able to reach DEMOCRATIC DECISIONS

Give examples of democratic decisions in own experience.

Give examples of advantages/disadvantages inherent in the democratic process of reaching decisions.

Able to reach a democratic decision in a conceivable situation.

2 Possess the capacity to BEHAVE HELPFULLY

Motivate helpfulness and the advantages of such behaviour.

Give examples of helpful behaviour in own experience (own and others').

Give examples of the consequences of not helping one another.

3 Possess the capacity to COOPERATE

Motivate cooperative behaviour and give examples of the advantages of such behaviour.

Motivate cooperation in own experience (own and others').

Suggest forms of cooperative behaviour in concrete situations.

Give examples of the consequence of non-cooperation.

IV Respect and understand EMOTIONAL REACTIONS

1 Understand OWN and OTHERS' EXPRESSIONS OF FEELING

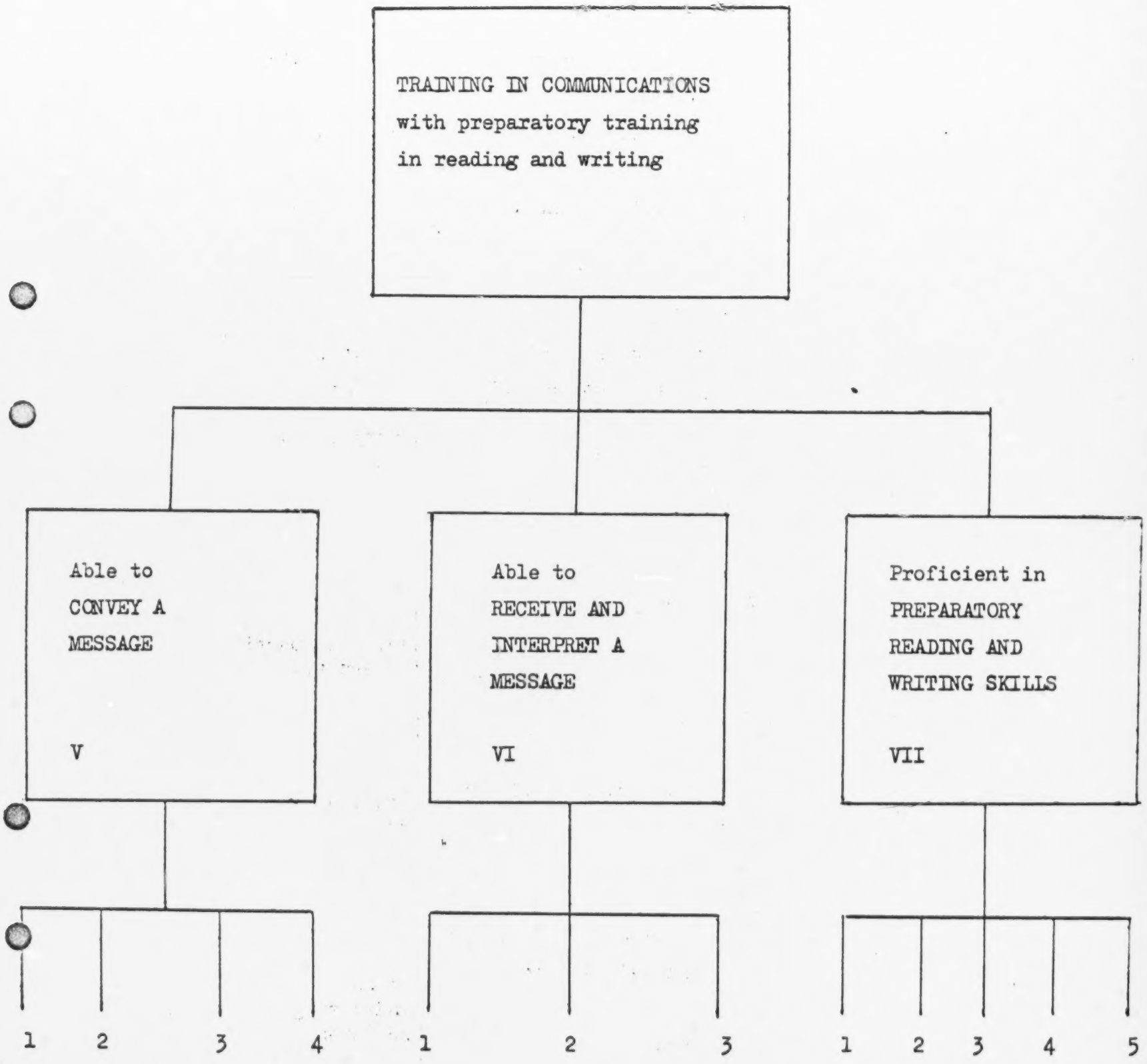
Able to perceive the connection between situation and feeling.

Give examples of occasions when one has been sad/happy etc.

Understanding of different temperaments

2 Oppose and canalize UNDESIRABLE EXPRESSIONS OF FEELING
Suggest alternative forms of behaviour in frustrating situations.

3 Develop DESIRABLE EXPRESSIONS OF FEELING
Able to decide whether an expression of feeling stands in reasonable proporting to its cause.
Suggest positive alternative forms of behaviours.


TRAINING IN COMMUNICATIONS
with preparatory training
in reading and writing
Able to
CONVEY A
MESSAGE
V
Able to
RECEIVE AND
INTERPRET A
MESSAGE
VI
Proficient in
PREPARATORY
READING AND
WRITING SKILLS
VII
1 2 3 4
1 2 3
1 2 3 4 5

V Able to CONVEY A MESSAGE

1 Able to pass on the CONTENT OF A MESSAGE.
Adapt the sound level of a report to various listeners' requirements.
Able to give a complete description of a situation or object.
Able to issue clear instructions.
Able to report events in logical sequence.
Able to report own estimation.

2 To have a CORRECT PRONUNCIATION
Able to distinguish between tense and relaxed musculature.) Relaxation
Able to vary rate and vocal pitch consciously)
Able to recite rhymes)
Able to reproduce all Swedish sounds) Formation of sounds

3 INCREASE VOCABULARY
Find words for various states of feeling.
Find words for various sensations.
Find group words.
Able to give examples of several objects belonging to the following categories: } Activate passive vocabulary

Have a good knowledge of words covering fields of current interest, etc. } Acquire new words

Glossary:
Able to carry out a given placing of objects.)
Able to determine position in relation to self and others.
Able to mark a given position.
Able to describe a position. } Words indicating position

4 Able to follow CORRECT GRAMMATICAL USAGE
Able to formulate sentences combined with:
Use as complete sentences as the situation requires.
Able to ask questions.

VI Able to RECEIVE AND INTERPRET A MESSAGE

1 Able to COMPREHEND THE CONTENT of a message.
Summarize the content of a message.
Place pictures in a given order following instructions.
Carry out working instructions.
Repeat details of an account.
Identify objects following a verbal description.

2 Obtain an INCREASED AUDITORY MEMORY
Repeat a sentence or an enumeration.
Repeat a rhythm.
Indicate changes in a sound sequence (removal or addition)
Indicate changes in sound sequence in an exchange.
Indicate changes in word sequence in an exchange.
Indicate changes in enumeration or an account.

3 Able to LISTEN CRITICALLY
Correct assertions which do not agree with earlier information.
Complete accounts correctly with the aid of earlier information.
Relate what has been heard - reality.
Assemble various pieces of information into one unit.
Pose hypotheses in relation to what is heard.

} Determine the origin of sounds heard

VII Proficient in PREPARATORY READING AND WRITING SKILLS

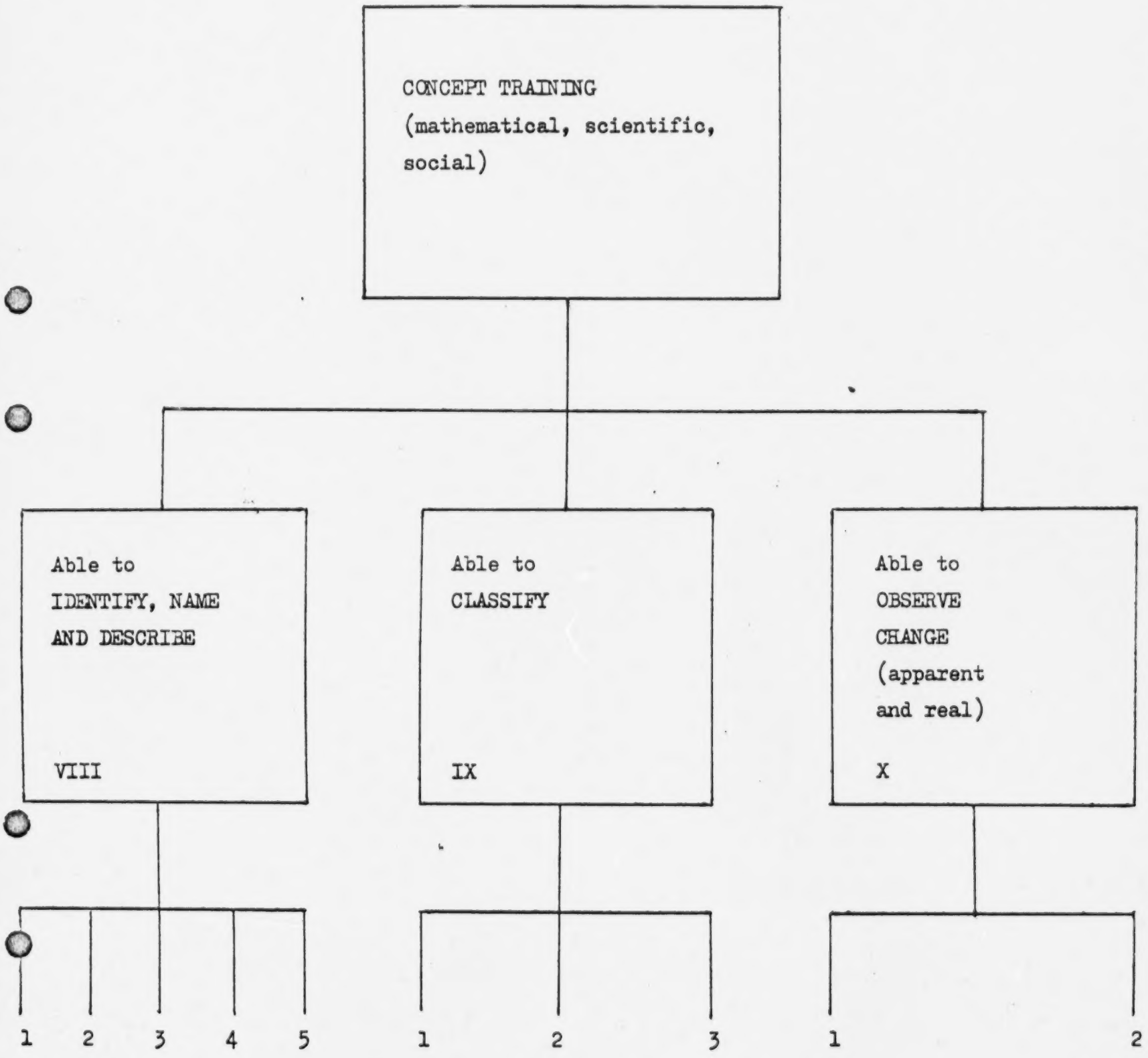
1 Able to ANALYSE A TEXT.
Find a given word in a continuous text.
Distinguish words beginning with a given initial letter in the text.
Able to indicate whether two letters are the same/not the same.
Able to indicate whether two words are the same/not the same with respect to length and identity.

2 Obtain an INCREASED VISUAL MEMORY
Able to reproduce a given pattern.
Able to count observed objects.
Be able to describe observed objects.
Be able to describe a picture illustrating a situation.

3 Improve COORINATION EYE-HAND
Able to cut out objects outlined.
Able to draw patterns following a visual model.
Able to join together two figures with a line drawn with some precision.

4 Understand the DIFFERENCE BETWEEN LEFT AND RIGHT
Able to observe and name objects in rows from left to right.
Able to arrange objects in systems of rows.
Able to arrange letters in positions for reading and writing.

5 Carry out LINGUISTIC SOUND ANALYSIS
Determine which sounds are heard first/last in a word.
Determine whether a given sound is heard at the beginning in the middle or at the end of a word.
Find words beginning with the same sound as a given word.
Decide whether given pairs of words are identical or not - e.g. car/bar
Decide whether a given sound is included/is not included in a given word.
Identify first/last word in a sentence.
Decide which of two words is the longer.
Fill in rhyming words in a rhyme.
Find several words to rhyme with a given word.


CONCEPT TRAINING
(mathematical, scientific, social)
Able to IDENTIFY, NAME AND DESCRIBE
VIII
Able to CLASSIFY
IX
Able to OBSERVE CHANGE (apparent and real)
X
1 2 3 4 5
1 2 3
1 2

VIII Able to IDENTIFY, NAME AND DESCRIBE

1 Able to identify, name and describe QUALITIES

Out of a collection of objects coloured red, orange, yellow, green, blue, violet, black, brown or grey, the child shall be able to indicate which objects are red, orange, yellow, green, blue, violet, black, brown, grey or white.

Out of a collection of objects coloured red, yellow, green or blue, the child shall be able to say that the object is red, green, blue or yellow if anyone points at the object and asks what colour it is.

Out of a collection of objects in different shades of the colours red, yellow, green or blue, the child shall be able to indicate those objects whose colours most resemble the colours red, yellow, green, blue.

} colour

Out of collection of light and dark objects having otherwise different characteristics, the child shall be able on verbal request to indicate the objects which are light and dark respectively.

Out of collection of objects having varying characteristics, sorted in respect of lightness or darkness, the child shall be able on verbal request to indicate the characteristics in respect of which the objects are sorted.

Out of collection of various large two-dimensional objects, the child shall be able on verbal request to sort the objects in respect of their shapes.

On verbal request the child shall be able to pair an observed three-dimensional shape with the two-dimensional shape which belongs to it.

} shape

Indicate the differences in shape between a square, an ellipse, a circle, a rectangle and a triangle, number of corners and number of sides.

On verbal request the child shall be able, by feeling an invisible three-dimensional object, to pair it with an object which has the same shape among a collection of objects visible to the child.

} shape

See 4 and 5
Light is replaced by <u>long</u> and dark by <u>short</u>.

See 4 and 5
Light is replaced by <u>large</u> and dark by <u>small</u>.

} size

Out of a collection of objects the child shall be able on verbal request to distinguish between those objects that are made of one material and those that are made of several materials.

Out of a number of objects sorted in respect of their being made of one or more materials, the child shall be able on verbal request to indicate how they are sorted.

Among objects each of which is made of a single material, being various plastics, varieties of wood or metals, the child shall be able on verbal request to indicate which objects are made of plastic, wood or metal.

Among objects each consisting of a single material and sorted in respect of their being made of plastic, wood or metal, the child shall be able on verbal request to indicate the material appropriate to each group.

Out of a collection of pieces of metal consisting of the metals iron, lead, aluminium and brass, the child shall be able on verbal request to sort the pieces according to the types of metal.

} material

Out of a collection of pieces of wood consisting of pine, oak, birch, and walnut, the child shall be able on verbal request to sort the pieces according to the type of wood.	material
Out of a collection of objects of different kinds of wood, of different shapes and sizes and containing at least two objects of each kind of wood, the child shall be able on verbal request to pair those objects what are of the same kind of wood.	material
Out of a collection of pieces of plastic of various types, the child shall be able on verbal request to sort the plastic pieces in accordance with the types of plastic.	material
See 4 and 5 Light is replaced by <u>hard</u> and dark with <u>soft</u>.	structure
See 4 and 5 Light is replaced by <u>transparent</u> and dark by <u>opaque</u>.	structure
See 4 and 5 Light is replaced by <u>smooth</u> and dark by <u>rough</u>.	structure
See 4 and 5 Light is replaced by <u>shiny</u> and dark by <u>dull</u>.	structure
See 4 and 5 Light is replaced by <u>heavy</u> and dark by <u>light</u>.	weight
With the aid of a graded thermometer the child shall indicate differences in temperature by warm, warmer - cold, colder.	temperature
The child shall indicate which liquid is cold and which is warm of two liquids having a difference in temperature of approx. 20° C.	temperature

When the child hears two notes of different strength he shall be able to indicate which note is strong and which is weak.

When the child hears two notes one of which is higher than the other, the child shall be able to indicate which note was high and which was low.

When the child hears two notes of different length, he shall be able to indicate which note was long and which was short.

Decide if one note is higher/lower than a given tone. Decide if one sound is louder/less loud than a given sound.

} sound

Of objects in a solid, liquid or gaseous state, the child shall be able on verbal request to identify which objects are solid, liquid or gaseous.

Out of collection of objects sorted in accordance with state, the child shall be able on verbal request to indicate how the objects are sorted.

} state of aggregation

To be able to indicate similarities and dissimilarities in respect of colour, size, thickness, length, height, weight and shape with the aid of visual and tactile observations. Corresponding characteristics with the aid of illustrated material.

Able to identify and name given figures (curves) such as circles, squares, rectangles and triangles with the aid of visual and tactile observations.

Able to draw logical patterns and describe them as well as able to draw patterns in accordance with certain principles.

} numerous characteristics

On verbal request the child shall be able to indicate several characteristics, e.g. colour, shape, weight, transparency and compressibility of an enclosed volume of gas. (air or freon).

Of the liquids oil, water, glycerine and milk, the child shall indicate several characteristics over and above form and quantity, e.g. colour, weight, transparency or viscosity.

After feeling an object the child shall pair it with an identical (in all respects save colour) object in a collection of objects visible to the child.

After feeling an object the child shall select an object identical to the first in respect of shape, structure, finish, size and weight, from a collection of concealed objects.

numerous characteristics

2 Able to RELATE observations to PREVIOUS EXPERIENCES

Able to discern exceptions to the rule.
Able to relate representation - reality.

Able to appreciate and compare prices of various objects worth between 1 and 5 Swedish Crowns as well as to indicate the relative value of the objects.
Able to compare children's ages from 0 to 5 years.

3 Able to identify, name and describe NUMBERS

By means of pairing to be able to find out and indicate whether there are as many/are not as many objects in two lots as well as to be able to identify an equal number of given objects with a given number in an actual lot or illustration of a lot. Able to depict the quantity of a given number. Capable of understanding that the size of objects has nothing to do with the size of numbers.

Able to compare two or three quantities with various numbers of objects and by means of pairing to find out and indicate which quantity has more-fewer-most objects, as well as the ability to compare two or three quantities with a particular quantity (quantity for the purposes of comparison) and to indicate which quantity has equally many-more-fewer objects than the paritcular quantity. Able to identify and depict more-fewer than a given numer. Corresponding exercises with the aid of illustrated material.

Able to estimate (without counting every individual object) and indicate the number of objects in groups of different objects arranged in different ways. Able with the aid of figure cards to show the number. Able to identify as many as a given number by means of placing or depicting an equivalent number. Corresponding exercises with the aid of illustrated material.

4 Able to identify quantity and to describe THE PRIMARY GROUPS OF SOCIETY

Give examples of various conceivable family compositions and households. Able to draw own family. Able to explain how a child comes into existence. Able to explain the meaning of the words parents/brothers and sisters. Able to speak of similarities/dissimilarities between own and other children's families.
Account for similarities between brothers and sisters. } composition

Able to give examples of functions (material, emotional and educative of the family. Able to give examples of the participation of members of own and other's families in family functions. } functions

Enumerate various kinds of relations.
Able to indicate similarities/dissimilarities between friends and relations. Able to work out Father's/Mother's family relationships and own relationship to these family members. Able to understand the succession of generations } relations

	Depict some friends of the family.	relations
5	Able to identify, name and describe SOCIAL INSTITUTIONS Describe the functions of the body. Able to give examples of the usefulness of prophylatic health services and give examples of own or brothers' and sisters' experiences. Describe the various duties of the medical staff. Give examples of situations calling for emergency treatment. Give examples of groups requiring special care.	health services
	Able to speak of similarities/dissimilarities between day nursery and nursery school (kindergarten comprehensive school). Able to speak from own experience of some good done by school. Know how own school attendance will be immediately after nursery school. Familiar with school terms (break, gym, etc). Familiar with different personnel categories found at school. Know what is normally to be found in a classroom. Explain what a museum (library, theatre) is and what its functions are.	school
	Give an exampel of something one needs every day and where it comes from. Give examples of various consumer goods and their origin. Able to speak about and give examples of the advantages of the division of labour in the community. Able to speak about and give examples of international trade.	production and consumption

Give examples of situations when we need the police/ fire brigade.
Describe some of the duties of policemen and firemen.
Give examples of similarities/dissimilarities between police and military personnel.
Give examples of similarities/dissimilarities between a fire brigade and the UN.
} the prevention of disasters

Know of a matter affecting the nursery school actually dealt with by the authorities concerned.
} how decisions are made

IX Able to CLASSIFY

1 Able to classify by CHARACTERISTICS
With the aid of symbol cards in matrices able to note and describe all the characteristics of an object. Able to identify an object after a description of at least three of its characteristics simultaneously.

Able to divide up a given quantity of objects into two or four sub-quantities repeatedly with regard to various characteristics as well as to indicate class membership of the objects in the lots.
Corresponding exercises with illustrated material.

Able to sort given objects into quantities and matrices with the aid of symbol cards for different characteristics in accordance with two characteristics simultaneously as well as able to indicate class membership. Able to understand that one and the same object can belong to both class simultaneously and able to explain why.

Given: 6 red and 2 blue cubes.
The child shall answer the question: What would be left if the red ones were taken away? Would there be only blue, only squares or both blue and squares left?

Given: 2 blue triangles, 4 blue squares and 3 red triangles. The child shall answer the questions: Are there more blue things than squares? Are there more triangles than blue things? Same questions but the answers to be given in numbers.

Given: 4 small red, 2 large green and 2 large red triangles. Tell the child that one box is for all the red objects. The child shall reply YES to the question: Do the little objects belong to the box with the red objects?

Go on to tell the child that there is another box for the triangles. The child shall reply YES to the question: Do the green objects belong to this box?

Given 1 yellow square 1 yellow circle
Given 1 green square 1 green circle
Given 1 red square 1 red circle
Given 1 blue square 1 blue circle

The child shall sort in accordance with one characteristic (colour/shape) and afterwards in accordance with another (shape/colour).

On verbal request the child shall be able to indicate in at least three ways characteristics of a given object in words describing colour, shape, structure, finish, size, weight, material or state.

Out of a total of not more than 10 different objects the child shall point out on verbal request one particular object if sufficient characteristics are stated.

2 Able to classify by NUMBER

Out of a given concrete quantity be able fo form double, triple, quadruple and quintruple quantities by placing or drawing a ring round the numbers in question. Able to indicate and with the aid of a figure card to show how many quantities they received and how many objects were left over. Corresponding exercises with the aid of illustrated material.

3 Able to arrange in SERIES

Able to compare the figures 0-5 with the aid of concrete quantities and coloured rods and able to indicate equality and unequality with respect to the values of the figures as well as able to understand that in the case of unequality several answers are often correct. Able to use the symbols for equality and unequality =
Able to place the figures 0-5 in correct sequence on the figure line and to be able to understand that when one adds in a positive direction, every figure is <u>larger by one</u> than its immediate predecessor and in the negative direction <u>less by one</u> than the figure immediately preceding.
Arrange objects in fonformity with rising and falling series.
Able to insert an object in a systematic sequence.

X Able to OBSERVE CHANGES
(apparent and actual)

1 Change BEFORE - AFTER

Able to remember a series of four to five objects or numbers. After the series has been changed in respect of one object or number, able to express what the change consists of.

Able to discover the difference between a given number and a smaller number by taking away from a given concrete quantity various numbers of objects as well as being able to indicate and to show with the figure card the difference (what was left over). Corresponding exercises with the aid of coloured rods and illustrated material.

Able to form "unions" of two to three quantities and to describe the unions. Able with the aid of the figure card to show the numbers in the quantities and unions. Corresponding exercises with the aid of illustrated material.

Appendix 4

PURPOSE: Understanding of THE WORTH OF OTHERS

Give examples of playing games with a handicapped person.
Give examples of similarities/dissimilarities between different nationalities ("normal"/handicapped).

Vocabulary: Defective sight and hearing, impeded movements, retarded development, blind, deaf, similarities, dissimilarities, circumstances, nationality, gene, environment, need, organ, aid, foreign.

Materials: Books, bandages, etc.

Suggested working methods: Discuss with the children how all people came into the world in the same way, by being born. That one often resembles one's mother, father, brothers and sisters. We all have the same needs, e.g., food, sleep, etc. Most people have eyes, hair, mouths, noses and other organs. Even though we have many similarities we also have some dissimilarities. Circumstances can vary, depending on our parents, those who attended our birth and where it took place. Obstretrical injuries, genes, environment. Inequalities in physical and psychological respects, e.g. impeded movements, defective vision and hearing, mental and emotional disorders.

Read I. Sandbergs Johan, pp. 118-126.
Read Bergsøe (Björbo), Barnen på jordklotet ("Children on the Earth").

Let the children bandage their eyes and feel what it is like to be blind, what one must do if one is to fetch something, for example. Explain to the children what aids are available: dogs, sticks, sound signals at street crossings, etc. Games one can play with a blind person, etc. --- Hearing, how it feels --- aids --- games. Impeded movements (housing, community planning, the future community).

Supplementary activities: If it can be arranged, let the children feel the effects of as many handicaps as possible in the same way.

Sing: A song with words in a foreign language.

Borrow picture books from the library with texts in Russian or Japanese, for example, to compare their alphabets with our own.

Read:

Petter, Helga och de andra, past 2 section 8.
"Thomas i huset mitt emot", by B G Hallquist.
Hurrah, I can whistle, Keats.
The first snow, Keats.
Ej för åsnor, Papas.
Blåbärspajen, Bonsell.
Pricken, M Rey.
Kjersti, B Friis-Baastad.
Randi bor i Norge, Riwkin-Brick.
Gennet bor i Etiopien, Riwkin-Brick.
Noy bor i Thailand, text by A Lindgren.
Tasso, Papas.
Drömringen, Kalstad.
Björn med trollhatten, H-E Hellberg.
Rosali, Kerstin Sundh.

Appendix 5

VOCABULARY 3

PURPOSE: To find words to describe sensations.

Materials: Paper bags, objects in the room or the scientific materials.

Vocabulary: Hard-soft, smooth-rough, shiny-dull, warm-cold, heavy-light.

Suggested working methods:

1 Place 3-5 objects in a paper bag.
Draw the objects on the board, etc.
One of the children carefully feels the objects in the bag and describes how they feel, what shapes they have and how large they are.
(In the beginning concentrate on one characteristic, e.g. shape).

The children who is occupied with the bag must not, of course, be able to see the drawings of the objects. The other children compare the descriptions with the drawings and point at the picture they think most suitable. Is that right? Then one tells the children what object it was and one wonders if it is possible to describe the object still more clearly (e.g. in colour, but then you can't feel that). Perhaps some words need to be changed - was it sleek or smooth?

2 Ask the children how it feels to walk barefoot along a gravelled road, carry a glass filled with water, place a hand on the branch of a tree, etc. Try how it feels. Think of the bare feet and the uneven gravel and all of us will walk along a gravelled road. Somebody may perhaps say that the gravel feels warm. Don't say: Now we are going to pretend we are walking along a gravelled road. That destroys the make-believe.

3 One describes how something feels without saying what it is. Example: The thing I am thinking of is something I have on when it is raining. It feels smooth and cold.
Is it an umbrella? No, I don't have that on me. One holds it in one's hand. It doesn't feel specially smooth, either.
What can it be?

Control: No special control - what is required is to be found in the scientific programme.

Appendix 6

FLOATS - DOES NOT FLOAT

PURPOSE: To observe and classify objects in respect of their character of floating in a liquid.

Materials: Objects from Box No. 11.

Suggested working methods: Show the children the objects you propose to use. Ask them if they can indicate which objects will float in water. Encourage discussion. Ask them to talk about their experiences of water, bathing, visits to the beach, throwing flat stones, etc.

By all means let the children carry out experiments in couples.

Distribute plastic mugs and half fill them with water.
Show the working sheets and explain what is written on them and what the children are to do. Take one object at a time and place it on a paper towel or newspaper for drying.
Let the children investigate the objects represented and report their results on the working sheets.
On the last sheet let them draw objects of their own that they wish to test.
Encourage them to bring from home interesting objects they would like to test. Peanuts, for example, behave oddly! Some sink, others float!
Discuss results with a group.
On some points they may have different opinions.
For example a mussel can float if it is placed in a certain way. Let the children demonstrate their findings if their results disagree.

Supplementary activities: Divide the collection of objects into two groups, floating objects and non-floating objects.
Discuss the working sheet with the two containers.
Let the children observe the difference between A and B. Why does this happen? Listen to all suggestions and where possible test them.

Appendix 7

PERIOD 9-10

1 Construct the contours of a house with several storeys on the flannelboard (use felt strips, for example).

The children work together in small groups on populating their floors. They use the flannel pictures and CREATE FAMILIES. When all the families are in position all the children are assembled to describe the families they have created. EACH CHILD DESCRIBES THE RELATIONSHIPS OF THE MEMBERS OF THE FAMILY (using words such as brothers and sisters, child, parents, etc.). Also more detailed descriptions (name, age, etc) should be encouraged.

Take one family and compare it with the other families, numbers. Is there the same number of members of families in the two groups to be compared? MAKE USE OF PAIRING to see if the elements in one group correspond to the number of elements in the comparison group (by all means use wool or a pipe-cleaner). Use the expressions, "as many", "more than " and "fewer than". (Does the work seem dull? - Work according to "Identify, name, describe" (green). Perhaps this is the time to break off. But first take a photograph of "the house" with its different families. Encourage comparisons between representation and reality. (How dark it became. - Yes, in reality it seems lighter. - Are all the families properly in the picture? Can you see them clearly? - Where did the photographer take the picture from? etc).

Photostrip No. 7 deals with relationships in families, can be combined with Seeing Critically, Point 5 (blue).

On a later occasion we select a family from the card and put its members up on the flannelboard. Repeat the relationships and ask questions such as "What do they do together?", "What do they do for each other?", "Do they all do the same things?" and "Is their any difference between what grown-ups do and children do?" The questions are intended to encourage the children to talk about different family functions. THE CHILDREN TALK AND THE TEACHER WRITES DOWN THEIR ACCOUNTS ON THE SCRIBBLING BLOCK.

Encourage all material concerned with the functions of the family (material, emotional, educational). Counteract fixation on the traditional roles of the sexes. When the account has been written down the teacher reads it to the children, pointing out all the time the words that have just been read aloud.

Stick up the photograph beside the text and let the account be visible in the room. On a later occasion the text is read again and A SHORT ANALYSIS IS MADE OF THE TEXT (Mark one of the words - the children find another which is exactly the same. Mark a short word - the children look up words which are longer, shorter or the same length).

For further effects try a concentrated saline solution and, if available, methyl alcohol, paraffin and oil. Popcorn in water with alkaseltzer is thoroughly recommended as a stimulating experiment in this context.

2 Exhibit a pair of mussels of the same species. Discuss their similarities and dissimilarities. Mussels belonging to the same species can be said to form a family and we can assign them different family roles: Big mussel - grown up individual, little mussel - child.

Set out about 40 mussels so that many species are represented. The children choose one each. They compare their mussels and those who have examples of the same species build a family which is given a place to live. Get the children to work out and propose the relationships to be found in the family now created. They describe similarities-dissimilarities of the family members - mussels. How many grown-ups (children - brothers and sisters...) are there? What parts shall be assigned to them? Will there be any lonely ones or ones without children?

Discuss on this basis various family formations. Use family words such as mother, father, grandfather, children, brothers and sisters, etc. Also discuss family traits, resemblances and differences.

Arrange the family in a group from the largest to the smallest mussel. Compare the numbers of the members of the families in the groups by pairing.

Use the expressions "more than, as many and fewer than" in describing the numbers.

Choose one mussel from those left over and describe it without the children being able to see it. To which family does the mussel belong? Let a child also choose a mussel and follow the same procedure.

3 Some children are told to form a group each and prepare a play for puppets.
The subject of the play shall be what the various members of the families do when they meet after work and attending school.
In their turn the children instruct the groups about what is going to happen. The act should be very brief and take place in a single sequence.

Examples of instructions:

You are going to play with puppets together with some school friends. You must fetch the puppets belonging to Ulla's family (4) (Sven's (3)). Dag can be on a visit (Siv's (2)). Collect as many friends as possible so that you each have a puppet. Go for yours yourselves and say who is going to play Mother/Father, children. Tell the others that it is all about what the members of the family do when they meet together in the evening. Say when you are ready so that the others can come along and look.

Discuss similarities/dissimilarities in puppet families/children's own families. Discuss the difference between friend and relation.

By all means continue with work of this type. Introduce the children to problems which they have to solve.

4 Work in accordance with "Jämför trä i olika form" ("Compare wood in different forms) (green). COMPARE REPRESENTATION/REALITY. On a later occasion THE CHILDREN DESCRIBE the work and THE TEACHER WRITES in the scribbling block.

ANALYSE THE TEXT in respect of the length of the words and initial letters.

5 Use the recorded music to reflect the mood. See Ordförrådet (Vocabulary) 4 (blue).

6 Use Picture Series 6 and/or puppet play. See "Samhällets primärgrupper" (The Primary Groups of Society) (red). "Du och jag och livet" (You and I and Life).

7 Working according to "Längdkonstans" (Lenght constancy). Note change - green.

8 Read "Mor var är de döda?" (Mother, where are the Dead?)

9 Work in accordance with "Använda begreppet ‚material" (Use the idea of material).

Controls: Working sheet - relations
Boken om mig själv - "Något om när jag föddes" p.11
(The book about Me - "Someting about when I was born")

"- -"Någon av familjens vänner" p.14
(Some friends of the family)
Familjens funktoner (p.20 red)
(Functions of the family)
Working sheet D 4 (blue)
" 6 (green p.16)
" 7 (green p.19)
" Sort in accordance with number of materials.